

# **IN THE UNITED STATES PATENT & TRADEMARK OFFICE**

## **SPECIFICATIONS AND CLAIMS OF PATENT APPLICATION**

### **CUE TIP CAP**

#### **BACKGROUND OF THE INVENTION**

This invention pertains to a protective device, and more particularly to a device that protects the tip of a pool cue stick.

#### **DESCRIPTION OF PRIOR ART**

The games of pool and billiards are well known. Thousands of persons of all skills play the games either occasionally or as a regular hobby.

It is a common practice for pool halls, taverns, and similar establishments to supply a number of cue sticks for their patrons to use. Such cue sticks, although usually of modest quality, are adequate for the occasional player. Serious players, however, invariably purchase their own cue sticks, often at considerable expense. High quality cue sticks can cost \$800 and more. To protect their investments, persons owning expensive cue sticks usually purchase carrying cases for them. Some carrying cases are themselves expensive, being made with a hard protective outer shell and including a hinged cover. An attractive and protective material lines the case and snugly grips the cue stick placed in it.

Because of the expense of hard shell carrying cases, players take efforts to maintain their attractive appearance. However, a problem exists regarding the chalk that is routinely

used on cue stick tips. When a cue stick is returned to its case, the chalk on the tip flakes off and falls into the carrying case. The result, especially over time, is an unsightly coating of chalk dust on the lining of the carrying case.

Some rather inexpensive carrying cases are designed with soft sides and zipper openings. When the cue stick is placed in such a case, its tip is not fully protected against hard blows.

An inherent limitation of a cue stick carrying case is that it protects a cue stick only when the cue stick is actually in the case. There are numerous times, especially during games, when a player carries his cue stick or sets it down without putting it in its case. During those times, the cue stick tip is vulnerable to striking an object and being damaged.

Thus, a need exists to adequately protect both the tips of cue sticks and the lining of their carrying cases.

### SUMMARY OF THE INVENTION

In accordance with the present invention, a cue tip cap is provided that protects both the tip of a cue stick and the lining of the cue stick's carrying case. This is accomplished by a device that includes a blind sleeve with a knob at the sleeve closed end.

The sleeve is made of a fairly pliable material such as rubber or soft plastic. The sleeve has an outer surface that may be cylindrical. The sleeve's inner surface converges slightly in the direction of its closed end at the same angle as the taper of a conventional cue stick. The sleeve's inner surface is sized to fit snugly over the cue stick tip end. To enable air flow to and from the interior of the sleeve, the sleeve has either longitudinal

splines or grooves formed on its inner surface.

The knob, which may serve a decorative purpose along with its functional purpose, is attached to the closed end of the sleeve. The knob enables a player to grasp it and pull the cue tip cap from the cue stick with ease.

In one embodiment, the sleeve closed end includes a stud, and the knob is threaded onto the stud. The stud may be molded integrally with the sleeve, or the stud may be a separate piece captured within the sleeve closed end. In that latter case, a layer of felt, cork, or a similar cushioning material may be placed inside the sleeve to protect the tip of the cue stick from the stud. In another embodiment, the stud is fabricated with the knob and screwed into threads formed inside the end of the sleeve.

The present invention, using a flexible sleeve having a slightly angled inner diameter, thus protects a cue stick tip from damage. It can be used on a cue stick whether it is in or out of its carrying case. The cue tip cap further prevents chalk on the tip from falling into the cue stick carrying case.

Other advantages, benefits, and features of the present invention will become apparent to those skilled in the art upon reading the detailed description of the invention.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a top view of a cue stick with a cue tip cap of the present invention, held in an open carrying case.

Fig. 2 is a detail of the cue tip cap.

Fig. 3 is a cross-sectional side view of the cue tip cap, taken along line 3-3 of Fig.

2.

Fig. 4 is a cross-sectional side view of an alternate embodiment of the cue tip cap, also taken along line 3-3 of Fig. 2.

Fig. 5 is a perspective angled side view of a cue tip cap showing grooves on the inside surface of the cap.

Fig. 6 is a perspective angled side view of another embodiment of a cue tip cap showing splines on the inside surface of the cap.

Figs. 7 through 10 are cross-sectional exploded side views of different embodiments of the cue tip cap of the present invention, showing different means of assembling the parts of the device.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to Figs. 1 and 2, a cue tip cap 1 of the present invention is shown in use on the end of a cue stick 2, which is used in the games of pool and billiards. Reference numeral 3 represents a typical carrying case for a cue stick 2. The particular carrying case 3 illustrated has a box section 4 that includes a rigid floor and four side walls. A cover 5 is openable and closeable on the box section 4 by means of hinges 6. The box section 4 is lined with a block 7 made of foam rubber or a similar deformable, yet protective material. The block 7 is formed with first and second elongated pockets 8, 9, respectively. The first pocket 8 holds the tip section 10 of the cue stick 2, and the second pocket 9 holds the handle section 11 of the cue stick 2. The cover 5 has a liner 12 of protective material similar to that of the block 7. When the cover 5 is closed, the cue stick 2 is gripped gently

but firmly between the foam block 7 and the liner 12.

In accordance with the present invention, the tip of the cue stick 2 is protected by the cue tip cap 1. For that purpose, the cue tip cap 1 is comprised of a sleeve 13 made from a soft rubber or a deformable plastic material, such as plastic. The sleeve 13 has an outer surface, which is typically cylindrical, and an inner surface that is slightly frustoconical in shape. The inner surface of the sleeve 13 has a diameter allowing it to fit over the end of the tip section 10 of the cue stick 2. The inner surface of the sleeve 13 is formed to follow the same angle as the angle of taper of the tip section 10. Attached to the sleeve 13 is a spherical knob 14, which acts as a "handle." The knob 14 is generally made from a hard plastic material, such as polyethylene or polystyrene.

The cross-sectional view in Fig. 3 shows the cue tip cap 1 in use. The cue tip cap 1 covers the tip 15 of the cue stick 2. Since chalk dust is often applied to the tip 15, the cue tip cap 1 keeps the chalk dust from falling into the carrying case. As Fig. 3 shows, the sleeve 13 fits snugly around the outer surface of the end of the cue stick 2. The knob 14 is attached to the sleeve 13 with a stud 16, which can be molded as an integral part of either the sleeve 13 or the knob 14, or it can be a separate piece. One end of the stud 16 is embedded in the first end 17 of the sleeve 13, and the other in the knob 14, which can be screwed onto the threaded surface 18 of stud 16. The stud 16 can be made from molded plastic, or it can be made from metal. The cue tip cap 1 is used by pushing its sleeve 13 over the tip 15 and adjacent portion of the tip section 10 of the cue stick 2. The soft material from which the sleeve 13 is made is able to expand the slight amount necessary to enable the sleeve 13 to grip the cue stick 2 with a snug friction fit.

The cue tip cap **1** protects the tip **15** when the cue stick **2** is out of the carrying case.

In addition, the cue tip cap **1** protects the tip **15** if the cue stick **2** is stored in a soft-sided carrying case, not shown, but well known to pool and billiards players.. The cue tip cap **1** provides the additional benefit of keeping loose chalk dust on the tip **15** from falling into the carrying case, so that the carrying case remains clean and free of chalk dust. The knob **14** provides a hand grasp for easy pulling of the cue tip cap **1** off the cue stick **2**. In addition, the knob **14** can fulfill a decorative function. It can also be used for promotional purposes, with an imprinted name, logo, or slogan.

Fig. 4 shows an alternate embodiment of the cue tip cap **1A**. A screw **19** is used to hold the knob **14** to the sleeve **13**. To protect the tip **15** of the cue stick **2** from the head **20** of the screw **19**, a cushion **21**, made from felt, cork, or other soft material, is bonded to the head **20** of the screw **19**.

Fig. 5 shows the open second end **22** of the sleeve **13**, as well as the inner surface **23** of the sleeve **13** of the cue tip cap **1**. Longitudinally-extending grooves **24**, cut in the inner surface **23** of the sleeve **13**, allow air to escape from between the tip **15** of the cue stick **2** and the inner surface **23** of the sleeve **13**.

Fig. 6 shows a cue tip cap **1B** having a sleeve **13** with an alternate design for its inner surface **25**. The inner surface **25** of the sleeve **13** is provided with a series of longitudinally extending splines **26**. The splines **26** allow the sleeve **13** to fit snugly over the tip section **10** of the cue stick **2** when the cue tip cap **1B** is pushed onto it. Further, the splines **26** create an air gap to allow air to escape from between the tip **15** of the cue stick **2** and the inner surface of the sleeve **13**. Fig. 6 also shows the cushion **21** which can be

bonded to the head **20** of the screw **19**.

As shown in Fig. 7 through Fig. 10, the cue tip cap **1** can be assembled in a number of ways. As shown in Fig. 7, the stud **16** can be molded as part of the first end **17** of the sleeve **13**, and the knob **14** has a cylindrical cavity **27**, which is threaded onto the threaded surface **18** of the stud **16**.

To make the cue tip cap **1C** shown in Fig. 8, the stud **28** can be molded as part of the knob **14**, and the threaded surface **18** of the stud **28** is threaded into a cavity **29** in the first end **17** of the sleeve **13**.

For the cue tip cap **1D** shown in Fig. 9, the stud **30** with a threaded surface **18** is a separate piece. One end of the stud **30** is threaded into a cylindrical cavity **27** in the knob **14**, and the other end of the stud **30** is threaded into a cavity **29** in the first end **17** of the sleeve **13**.

For the cue tip cap **1A** shown in Fig. 10, the stud **16** has been replaced by a screw **19** with a head **20**. The end of the screw **19** is screwed through an opening **31** in the first end **17** of the sleeve **13**, and then screwed into a cylindrical cavity **27** in the knob **14**.

As shown in Fig. 11 through Fig. 13, yet another embodiment of the invention shows a cue tip cap **1E**, having a hard sleeve **32** with a soft insert **33**. The hard sleeve **32**, which is cylindrical in shape, is generally made of the same hard plastic material, such as polyethylene or polystyrene, as the knob **14**. The knob **14** can also be made from other hard materials, such as crystal or metal. The soft insert **33** is a sleeve made from a deformable material such as soft rubber or plastic, and it is sized to fit inside the bore **34** of the hard sleeve **32**. The first end of the soft insert **33** is molded with the head **35** of a

brass screw 36 embedded therein. Longitudinally-extending grooves 37, cut in the inner surface 38 of the soft insert 33, allow air to escape from between the tip 15 of the cue stick 2 and the inner surface 38 of the soft insert 33.

In assembling the cue tip cap 1E, the soft insert 33 is pushed into the bore 34 of the hard sleeve 32, and the end of the screw 36 is screwed through an opening 39 in the hard sleeve 32, and then screwed into a cylindrical cavity 27 in the knob 14. As shown in Fig. 12, the deformable soft insert 33 fits snugly inside the hard sleeve 32, which provides a firm surface for the user to handle. Fig. 13 shows the grooves 37 in the inner surface 38 of the soft insert 33 inside the hard sleeve 34.

In summary, the cue tip cap 1 of the present invention provides both protection to the vulnerable tip of a cue stick 2 and neatness to a cue stick carrying case 3. This desirable result comes from using the combined functions of the sleeve 13 and the knob 14. The sleeve 13 grips the tip 15 of the cue stick 2 with a snug friction fit. The cue tip cap 1 protects the tip 15 whenever it is on the cue stick 2, both in and out of a carrying case 3. The cue tip cap also captures chalk dust that otherwise would flake off the tip 15 into the carrying case 3.

It will also be recognized that in addition to the superior performance of the invention, its construction is such as to be of very modest cost. Consequently, it is affordable by almost all pool and billiards players regardless of their level of skill. Also, since the design is simple and made of rugged components, the need for maintenance is minimal.

Thus, it is apparent that there has been provided, in accordance with the invention,

a cue tip cap 1 that fully satisfies the aims and advantages set forth above. While the invention has been described in conjunction with specific embodiments thereof, it is evident that many alternatives, modifications, and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, it is intended to embrace all such alternatives, modifications, and variations as fall within the spirit and broad scope of the appended claims.

Although the disclosure hereof is detailed and exact to enable those skilled in the art to practice the invention, the physical embodiments herein disclosed merely exemplify the invention, which may be embodied in other specific structures. The scope of the invention is defined in the claims appended hereto.